

While yields for these new cotton varieties have lacked stability, fiber quality is typically equal to or better than the first generation biotech cotton varieties. To better understand performance of these new varieties the presentation will focus on yield stability models and fiber quality evaluations for several of the more popular cotton varieties grown in the North Delta region.

► Net Return Comparison Of No Tillage And Minimum Tillage Cotton-Corn Rotations

Presented by Dr. Steven W. Martin

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Presented by James Hanks

Crop rotations have been shown to have agronomic benefits. An increasingly common crop rotation in the Mid-South is cotton rotated with corn. Many previous studies have focused on tillage systems or crop rotations. Few have evaluated a combination of the two (crop rotations and tillage) especially from an economics perspective. Field studies were conducted at Stoneville, MS for the period 2001-2006. Treatments included no-till continuous cotton, minimum till continuous cotton, one year corn followed by two years cotton no till, one year corn followed by two years cotton minimum till, one year corn-one year cotton no till and one year corn-one year cotton minimum till. Results revealed that cotton yields were increased in all four systems rotated with corn. Lower risk was associated with minimum till cotton. Gross returns were higher in a monoculture minimum till cotton system. Net returns were larger in a system that included minimum tillage and a corn rotation. The highest net returns and lowest risk were obtained from a minimum till system of cotton rotated with corn every other year. For those producers required to use a no-till system, a one year corn-two year cotton rotation provided the highest net returns and least risk.

Table 1. Average Treatment Yields for the period 2001-2006, Stoneville, MS.

Treatment	Yield
NTC	992
MTC	1006
Corn/NTC/NTC	1097
Corn/MTC/MTC	1096
Corn/NTC/Corn	1138
Corn/MTC/Corn	1182

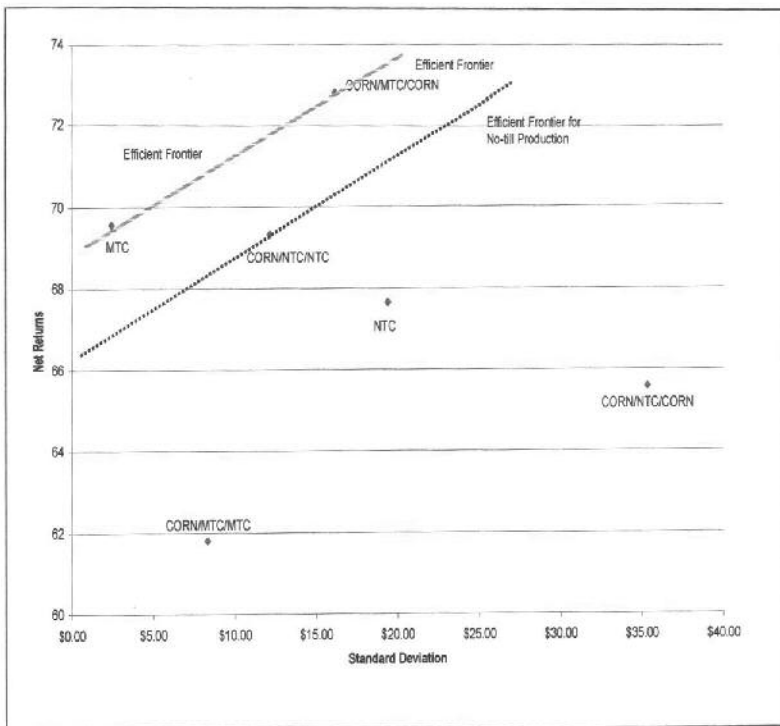
Table 2. Average Treatment Returns from 2001-2006, Stoneville, MS.

Treatment	Average Returns
NTC	\$565.64
MTC	\$573.56
CORN/NTC/NTC	\$548.32
CORN/MTC/MTC	\$546.80
CORN/NTC/CORN	\$535.37
CORN/MTC/CORN	\$548.82

Table 3. Average Treatment Net Returns and Standard Deviations from 2001-2006, Stoneville, MS.

Treatment	Net Returns	Standard Deviation
NTC	\$67.64	\$19.41
MTC	\$69.56	\$2.44
CORN/NTC/NTC	\$69.32	\$12.18
CORN/MTC/MTC	\$61.80	\$8.34
CORN/NTC/CORN	\$65.57	\$35.94
CORN/MTC/CORN	\$72.82	\$16.18

Figure 1. Mean Net Returns and Standard Deviation Comparison from 2001-2006, Stoneville, MS.



► Accumulation Of Nitrates In Soil Profiles Due To Over-Fertilized With Urea In Optimum Irrigated And Dry Land Cotton Production Systems

Presented by Dr. J. Scott McConnell

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Nitrogen (N) fertilizer use in cotton (*Gossypium hirsutum* L.) production has come under scrutiny as a potential source of nitrate contamination of streams and ground water. This study was conducted to determine the distribution of nitrate-N in soil cropped to continuous cotton, and to evaluate fertilization practices and irrigation methods that might exacerbate the accumulation of nitrate--N in the soil profile.

Long-term N-fertilization studies in side-by-side irrigation blocks at the Southeast Branch Experiment Station at Rohwer, Arkansas, the McConnell - Mitchell Plots, were utilized to determine nitrate-N accumulation and depletion. The soil at the study site was an Hebert silt loam (fine-silty, mixed, thermic Aeric Ochraqualfs). This test, the oldest continuous test in Arkansas, was established in 1982. The two irrigation methods reported are furrow flow irrigation (FI) and high-frequency center pivot (HFCP). The two irri-